



SEQUENCE LISTING

C
CONT'D
<110> O'Brien, John S.

<120> METHODS FOR ALLEVIATING NEUROPATHIC PAIN

<130> 07256/024001

<140> 08/928,074

<141> 1997-09-11

<150> 08/611,307

<151> 1996-03-05

<150> PCT/US97/04143

<151> 1996-03-05

<160> 25

<170> PatentIn Ver. 2.0

<210> 1

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial
peptide sequence

<400> 1

Cys Glu Phe Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys
1 5 10 15

20

Thr Glu Lys Glu Ile Leu

20

<210> 2

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<220>

<221> MOD_RES

<222> (2)

<223> Ala at position 2 is a D-enantiomer

<400> 2

Thr Ala Leu Ile Asp Asn Asn Ala Thr Glu Glu Ile Leu Tyr
1 5 10

<210> 3
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial Peptide Sequence (Amino acids 18-29 of
saposin C)

<400> 3
Leu Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu
1 5 10

<210> 4
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (Mouse)

<400> 4
Cys Gln Phe Val Met Asn Lys Phe Ser Glu Leu Ile Val Asn Asn Ala
1 5 10 15

Thr Glu Glu Leu Leu Tyr
20

<210> 5
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (Rat)

<400> 5
Cys Gln Leu Val Asn Arg Lys Leu Ser Glu Leu Ile Ile Asn Asn Ala
1 5 10 15

Thr Glu Glu Leu Leu
20

<210> 6

460

<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (Guinea Pig)

<400> 6
Cys Glu Tyr Val Val Lys Lys Val Met Leu Leu Ile Asp Asn Asn Arg
1 5 10 15

Thr Glu Glu Lys Ile Ile
20

<210> 7
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (Bovine)

<400> 7
Cys Glu Phe Val Val Lys Glu Val Ala Lys Leu Ile Asp Asn Asn Arg
1 5 10 15

Thr Glu Glu Glu Ile Leu
20

<210> 8
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<400> 8
Cys Glu Phe Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asp Asn Lys
1 5 10 15

Thr Glu Lys Glu Ile Leu
20

<210> 9
<211> 14
<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<400> 9
Thr Lys Leu Ile Asp Asn Asp Lys Thr Glu Lys Glu Ile Leu
1 5 10

<210> 10
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<400> 10
Thr Lys Ser Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu
1 5 10

<210> 11
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hCNTF)

<400> 11
Tyr Val Lys His Gln Gly Leu Asn Lys Asn Ile Asn Leu Asp Ser Val
1 5 10 15

Asp Gly Val Pro
20

<210> 12
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hIL-6)

<400> 12
Glu Ala Leu Ala Glu Asn Asn Leu Asn Leu Pro Lys Met Ala Gly

1

5

10

15

<210> 13
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hIL-2)

<400> 13
Leu Gln Met Ile Leu Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu
1 5 10 15

Thr

<210> 14
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hIL-3)

<400> 14
Ile Leu Met Glu Asn Asn Leu Arg Arg Pro Asn Leu
1 5 10

<210> 15
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hIL1-gamma)

<400> 15
Phe Tyr Leu Arg Asn Asn Gln Leu Val Ala Gly Thr Leu
1 5 10

<210> 16
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hEPO)

<400> 16
Ala Glu His Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys
1 5 10 15

Val

<210> 17
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<400> 17
Tyr Thr Ala Gln Gly Glu Pro Phe Pro Asn Asn Val Glu Lys Leu Cys
1 5 10 15

Ala Pro

<210> 18
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hIL-1beta)

<400> 18
Phe Asn Lys Ile Glu Ile Asn Asn Lys Leu Glu Phe Glu Ser Ala
1 5 10 15

<210> 19
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence (hONC-M)

<400> 19

Arg Pro Asn Ile Gly Leu Arg Asn Asn Ile Tyr Cys Met Ala Gln Leu
1 5 10 15

Leu

<210> 20

<211> 18

<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<400> 20
Tyr Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys Glu
1 5 10 15

Ile Leu

<210> 21

<211> 66

<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Artificial
Nucleic Acid Sequence

<220>

<221> CDS

<222> (1)..(66)

<400> 21
tgt gaa ttc ctg gtg aag gag gtg acc aag ctg att gac aac aac aag 48
Cys Glu Phe Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys
1 5 10 15

66

act gag aaa gaa ata ctc
Thr Glu Lys Glu Ile Leu
20

<210> 22

<211> 2749

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(1572)

<400> 22 48
atg tac gcc ctc ttc ctc ctg gcc agc ctc ctg ggc gcg gct cta gcc
Met Tyr Ala Leu Phe Leu Leu Ala Ser Leu Leu Gly Ala Ala Leu Ala
1 5 10 15
ggc ccg gtc ctt gga ctg aaa gaa tgc acc agg ggc tcg gca gtg tgg 96
Gly Pro Val Leu Gly Leu Lys Glu Cys Thr Arg Gly Ser Ala Val Trp
20 25 30
tgc cag aat gtg aag acg gcg tcc gac tgc ggg gca gtg aag cac tgc 144
Cys Gln Asn Val Lys Thr Ala Ser Asp Cys Gly Ala Val Lys His Cys
35 40 45
ctg cag acc gtt tgg aac aag cca aca gtg aaa tcc ctt ccc tgc gac 192
Leu Gln Thr Val Trp Asn Lys Pro Thr Val Lys Ser Leu Pro Cys Asp
50 55 60
ata tgc aaa gac gtt gtc acc gca gct ggt gat atg ctg aag gac aat 240
Ile Cys Lys Asp Val Val Thr Ala Ala Gly Asp Met Leu Lys Asp Asn
65 70 75 80
gcc act gag gag gag atc ctt gtt tac ttg gag aag acc tgt gac tgg 288
Ala Thr Glu Glu Glu Ile Leu Val Tyr Leu Glu Lys Thr Cys Asp Trp
85 90 95
ctt ccg aaa ccg aac atg tct gct tca tgc aag gag ata gtg gac tcc 336
Leu Pro Lys Pro Asn Met Ser Ala Ser Cys Lys Glu Ile Val Asp Ser
100 105 110
tac ctc cct gtc atc ctg gac atc att aaa gga gaa atg agc cgt cct 384
Tyr Leu Pro Val Ile Leu Asp Ile Ile Lys Gly Glu Met Ser Arg Pro
115 120 125
ggg gag gtg tgc tct gct ctc aac ctc tgc gag tct ctc cag aag cac 432
Gly Glu Val Cys Ser Ala Leu Asn Leu Cys Glu Ser Leu Gln Lys His
130 135 140
cta gca gag ctg aat cac cag aag cag ctg gag tcc aat aag atc cca 480
Leu Ala Glu Leu Asn His Gln Lys Gln Leu Glu Ser Asn Lys Ile Pro
145 150 155 160
gag ctg gac atg act gag gtg gtg gcc ccc ttc atg gcc aac atc cct 528
Glu Leu Asp Met Thr Glu Val Val Ala Pro Phe Met Ala Asn Ile Pro
165 170 175
ctc ctc ctc tac cag gac ggc ccc cgc agc aag ccc cag cca aag 576
Leu Leu Leu Tyr Pro Gln Asp Gly Pro Arg Ser Lys Pro Gln Pro Lys
180 185 190
gat aat ggg gac gtt tgc cag gac tgc att cag atg gtg act gac atc 624

Asp Asn Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val Thr Asp Ile
 195 200 205 672
 cag act gct gta cgg acc aac tcc acc ttt gtc cag gcc ttg gtg gaa
 Gln Thr Ala Val Arg Thr Asn Ser Thr Phe Val Gln Ala Leu Val Glu
 210 215 220
 cat gtc aag gag gag tgt gac cgc ctg ggc cct ggc atg gcc gac ata 720
 His Val Lys Glu Glu Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Ile
 225 230 235 240
 tgc aag aac tat atc agc cag tat tct gaa att gct atc cag atg atg 768
 Cys Lys Asn Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met
 245 250 255
 atg cac atg caa ccc aag gag atc tgt gcg ctg gtt ggg ttc tgt gat 816
 Met His Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp
 260 265 270
 gag gtg aaa gag atg ccc act ctg gtc ccc gcc aaa gtg gcc 864
 Glu Val Lys Glu Met Pro Met Gln Thr Leu Val Pro Ala Lys Val Ala
 275 280 285
 tcc aag aat gtc atc cct gcc ctg gaa ctg gtg gag ccc att aag aag 912
 Ser Lys Asn Val Ile Pro Ala Leu Glu Leu Val Glu Pro Ile Lys Lys
 290 295 300
 cac gag gtc cca gca aag tct gat gtt tac tgt gag gtg tgt gaa ttc 960
 His Glu Val Pro Ala Lys Ser Asp Val Tyr Cys Glu Val Cys Glu Phe
 305 310 315 320
 ctg gtg aag gag gtg acc aag ctg att gac aac aac aag act gag aaa 1008
 Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys
 325 330 335
 gaa ata ctc gac gct ttt gac aaa atg tgc tcg aag ctg ccg aag tcc 1056
 Glu Ile Leu Asp Ala Phe Asp Lys Met Cys Ser Lys Leu Pro Lys Ser
 340 345 350
 ctg tcg gaa gag tgc cag gag gtg gac acg tac ggc agc tcc atc 1104
 Leu Ser Glu Glu Cys Gln Glu Val Val Asp Thr Tyr Gly Ser Ser Ile
 355 360 365
 ctg tcc atc ctg ctg gag gag gtc agc cct gag ctg gtg tgc agc atg 1152
 Leu Ser Ile Leu Leu Glu Glu Val Ser Pro Glu Leu Val Cys Ser Met
 370 375 380
 ctg cac ctc tgc tct ggc acg cgg ctg cct gca ctg acc gtt cac gtg 1200
 Leu His Leu Cys Ser Gly Thr Arg Leu Pro Ala Leu Thr Val His Val
 385 390 395 400
 act cag cca aag gac ggt ggc ttc tgc gaa gtg tgc aag aag ctg gtg 1248
 Thr Gln Pro Lys Asp Gly Gly Phe Cys Glu Val Cys Lys Lys Leu Val

405	410	415	
ggt tat ttg gat cgc aac ctg gag aaa aac agc acc aag cag gag atc Gly Tyr Leu Asp Arg Asn Leu Glu Lys Asn Ser Thr Lys Gln Glu Ile	425	430	1296
420			
ctg gct gct ctt gag aaa ggc tgc agc ttc ctg cca gac cct tac cag Leu Ala Ala Leu Glu Lys Gly Cys Ser Phe Leu Pro Asp Pro Tyr Gln	440	445	1344
435			
aag cag tgt gat cag ttt gtg gca gag tac gag ccc gtg atc gag Lys Gln Cys Asp Gln Phe Val Ala Glu Tyr Glu Pro Val Leu Ile Glu	455	460	1392
450			
atc ctg gtg gag gtg atg gat cct tcc ttc gtg tgc ttg aaa att gga Ile Leu Val Glu Val Met Asp Pro Ser Phe Val Cys Leu Lys Ile Gly	470	475	1440
465			
gcc tgc ccc tcg gcc cat aag ccc ttg ttg gga act gag aag tgt ata Ala Cys Pro Ser Ala His Lys Pro Leu Leu Gly Thr Glu Lys Cys Ile	485	490	1488
480			
tgg ggc cca agc tac tgg tgc cag aac aca gag aca gca gcc cag tgc Trp Gly Pro Ser Tyr Trp Cys Gln Asn Thr Glu Thr Ala Ala Gln Cys	505	510	1536
500			
aat gct gtc gag cat tgc aaa cgc cat gtg tgg aac taggaggagg Asn Ala Val Glu His Cys Lys Arg His Val Trp Asn	515	520	1582
aatattccat cttggcagaa accacagcat tggttttttt ctacttgtgt gtctggggga			1642
atgaacgcac agatctgttt gactttgtta taaaaatagg gctccccac ctccccatt			1702
tctgtgtcct ttattgtac attgctgtct gcaaggagac ccctagcccc tggcagacat			1762
agctgcttca gtccccctt tctctctgct agatggatgt tgatgcactg gaggtctttt			1822
agcctgcctc tgcattggcgc ctgctggagg aggagagac tctgctggca tgagccacag			1882
tttcttgact ggaggccatc aaccctctt gttgaggcct tttctggcc ctgacatgt			1942
cttgggcact ggtggcctg ggcttctgag gtggcctcct gccctgatca gggaccctcc			2002
ccgctttcct gggcctctca gttgaacaaa gcagcaaaac aaaggcagtt ttatatgaaa			2062
gattagaagc ctgaaataat caggctttt aaatgatgta attcccactg taatagcata			2122
gggattttgg aagcagctgc tggtggcttg ggacatcagt ggggccaagg gttctctgtc			2182
cctgggttcaa ctgtgatttg gctttccgt gtcttcctg gtgatgcctt gtttggggtt			2242
ctgtgggtt ggggtggaaag agggcaatct gcctgaatgt aacctgctag ctctccgaag			2302

gccctgcggg cctggcttgt gtgagcgtgt ggacagtggt ggccgcgtg tgcctgctcg 2362
tggccctac atgtccctgg ctgtttaggc gctgcttcag cctgcacccc tcccttgtct 2422
catagatgct cctttgacc ttttcaaata aatatggatg gcgagctcct aggcctctgg 2482
cttcctggta gagggcggca tgccgaaggg tctgctcggt gtggattgga tgctgggtg 2542
tgggggttgg aagctgtctg tggcccactt gggcacactt gggcacccac gcttctgtcc 2602
acttctgggtt gccaggagac agcaagcaa gccagcagga catgaagttg ctattaaatg 2662
gacttcgtga tttttttt gcactaaagt ttctgtgatt taacaataaa attctgttag 2722
ccagaaaaaa aaaaaaaaaa aaaaaaaaaa 2749

<210> 23

<211> 524

<212> PRT

<213> Homo sapiens

<400> 23
Met Tyr Ala Leu Phe Leu Leu Ala Ser Leu Leu Gly Ala Ala Leu Ala
1 5 10 15

Gly Pro Val Leu Gly Leu Lys Glu Cys Thr Arg Gly Ser Ala Val Trp
20 25 30

Cys Gln Asn Val Lys Thr Ala Ser Asp Cys Gly Ala Val Lys His Cys
35 40 45

Leu Gln Thr Val Trp Asn Lys Pro Thr Val Lys Ser Leu Pro Cys Asp
50 55 60

Ile Cys Lys Asp Val Val Thr Ala Ala Gly Asp Met Leu Lys Asp Asn
65 70 75 80

Ala Thr Glu Glu Glu Ile Leu Val Tyr Leu Glu Lys Thr Cys Asp Trp
85 90 95

Leu Pro Lys Pro Asn Met Ser Ala Ser Cys Lys Glu Ile Val Asp Ser
100 105 110

Tyr Leu Pro Val Ile Leu Asp Ile Ile Lys Gly Glu Met Ser Arg Pro
115 120 125

Gly Glu Val Cys Ser Ala Leu Asn Leu Cys Glu Ser Leu Gln Lys His
130 135 140

Leu Ala Glu Leu Asn His Gln Lys Gln Leu Glu Ser Asn Lys Ile Pro
145 150 155 160

Glu Leu Asp Met Thr Glu Val Val Ala Pro Phe Met Ala Asn Ile Pro
165 170 175
Leu Leu Leu Tyr Pro Gln Asp Gly Pro Arg Ser Lys Pro Gln Pro Lys
180 185 190
Asp Asn Gly Asp Val Cys Gln Asp Cys Ile Gln Met Val Thr Asp Ile
195 200 205
Gln Thr Ala Val Arg Thr Asn Ser Thr Phe Val Gln Ala Leu Val Glu
210 215 220
His Val Lys Glu Glu Cys Asp Arg Leu Gly Pro Gly Met Ala Asp Ile
225 230 235 240
Cys Lys Asn Tyr Ile Ser Gln Tyr Ser Glu Ile Ala Ile Gln Met Met
245 250 255
Met His Met Gln Pro Lys Glu Ile Cys Ala Leu Val Gly Phe Cys Asp
260 265 270
Glu Val Lys Glu Met Pro Met Gln Thr Leu Val Pro Ala Lys Val Ala
275 280 285
Ser Lys Asn Val Ile Pro Ala Leu Glu Leu Val Glu Pro Ile Lys Lys
290 295 300
His Glu Val Pro Ala Lys Ser Asp Val Tyr Cys Glu Val Cys Glu Phe
305 310 315 320
Leu Val Lys Glu Val Thr Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys
325 330 335
Glu Ile Leu Asp Ala Phe Asp Lys Met Cys Ser Lys Leu Pro Lys Ser
340 345 350
Leu Ser Glu Glu Cys Gln Glu Val Val Asp Thr Tyr Gly Ser Ser Ile
355 360 365
Leu Ser Ile Leu Leu Glu Glu Val Ser Pro Glu Leu Val Cys Ser Met
370 375 380
Leu His Leu Cys Ser Gly Thr Arg Leu Pro Ala Leu Thr Val His Val
385 390 395 400
Thr Gln Pro Lys Asp Gly Gly Phe Cys Glu Val Cys Lys Lys Leu Val
405 410 415
Gly Tyr Leu Asp Arg Asn Leu Glu Lys Asn Ser Thr Lys Gln Glu Ile
420 425 430
Leu Ala Ala Leu Glu Lys Gly Cys Ser Phe Leu Pro Asp Pro Tyr Gln

435	440	445
Lys Gln Cys Asp Gln Phe Val Ala Glu Tyr Glu Pro Val Leu Ile Glu		
450	455	460
Ile Leu Val Glu Val Met Asp Pro Ser Phe Val Cys Leu Lys Ile Gly		
465	470	475
Ala Cys Pro Ser Ala His Lys Pro Leu Leu Gly Thr Glu Lys Cys Ile		
485	490	495
Trp Gly Pro Ser Tyr Trp Cys Gln Asn Thr Glu Thr Ala Ala Gln Cys		
500	505	510
Asn Ala Val Glu His Cys Lys Arg His Val Trp Asn		
515	520	

<210> 24
 <211> 80
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Artificial
 Peptide Sequence

<400> 24	Ser Asp Val Tyr Cys Glu Val Cys Glu Phe Leu Val Lys Glu Val Thr	15
1	5	10
Lys Leu Ile Asp Asn Asn Lys Thr Glu Lys Glu Ile Leu Asp Ala Phe		
20	25	30
Asp Lys Met Cys Ser Lys Leu Pro Lys Ser Leu Ser Glu Glu Cys Gln		
35	40	45
Glu Val Val Asp Thr Tyr Gly Ser Ser Ile Leu Ser Ile Leu Leu Glu		
50	55	60
Glu Val Ser Pro Glu Leu Val Cys Ser Met Leu His Leu Cys Ser Gly		
65	70	75
80		

<210> 25
 <211> 12
 <212> PRT
 <213> Artificial Sequence

<220>

*C
Conc'D*

<223> Description of Artificial Sequence: Artificial
Peptide Sequence

<220>

<221> PEPTIDE

<222> (1)..(12)

<223> X at position 3, 11 and 12 is any amino acid; X at
position 6 is any amino acid, but not L or R; X at
position 8 and 10 is a charged amino acid; and X
at position 9, when present is a charged residue

<400> 25

Leu Ile Xaa Asn Asn Xaa Thr Xaa Xaa Xaa Xaa Xaa

1

5

10